

SECRET

G-MB 691/63  
28 October 1963

MEMORANDUM FOR: Chief, International Division, ORR

ATTENTION: 

FROM: Chief, CIA/PID (NPIC)

SUBJECT: Analysis of damage to Cuban Transportation System and Economy by Hurricane Flora.

REFERENCE: Requirement Nos. C-RR3-80,721 (Project No. C 1510-63) and C-RR3-80,726 (Project No. C 1511-63).

1. In response to Requirement Nos. C-RR3-80,721 (C 1510-63) and C-RR3-80,726 (C 1511-63), a study was made from aerial photography dated  to determine the location, type and extent of damage to highways, railroads, bridges and selected ports in Cuba. In addition, a total of 63 pre-selected sugar centrals in eastern Cuba were analysed to note extent of wind and/or water damage to each central and their immediate surroundings. In addition, the Rente Power Plant in Santiago de Cuba, the Moa Bay and Nicaro Nickel Plants, the Hermanos Diaz Petroleum Refinery at Santiago de Cuba, and the Camaguey Railroad Repair Shops were re-examined to ascertain if there was any damage to these facilities which was not previously reported in NPIC/R-1523/63.

2. The results of this study were placed on overlays, keyed to AMS Series E502, Sheets NF 17-8, NF 17-12, NF 17-16, NF 18-5, NF 18-9, NF 18-10, NF 18-13, NF 18-14, and NF 18-15, using symbols for damage to the transportation system and annotations to delineate damage to the sugar centrals and ports. Each of the sugar centrals was assigned a number on the overlays which corresponds with accompanying listing (Enclosure 1 to this memorandum).

3. A total of 18 annotated ozalid overlays (CIA/PID/GMB/P-4821/63 thru P-4829/63, copies 1 and 2) are herewith forwarded for your retention.

4. The photo analysis on this project was performed by the Industrial and Geo-Military Branches of CIA/PID (NPIC). Any questions concerning this project should be directed to  CIA/PID/GMB (NPIC), or  CIA/PID/IB (NPIC), who may be contacted on ext. 2549 and 2905 respectively.

## ENCLOSURES:

1 Key to Sugar Centrals.

18 Annotated ozalid overlays (CIA/PID/GMB/P-4821/63 thru P-4829/63, copies 1 and 2).

DDR-DUPE

## ENCLOSURE 1

<u>New Name</u>	<u>Old Name</u>	<u>Location</u>
1. Brasil	Jaronu	21-51N 77-58W
2. Ciro Redondo	Moron	22-01N 78-43W
3. Guatemala	Preston	20-47N 75-39W
4. Venezuela	Stewart	21-44N 78-48W
5. Antonio Guiteras	Delicias	21-11N 76-34W
6. Areglia Libre	Manati	21-11N 76-55W
7. Bolivia	Cunagua	22-05N 78-20W
8. Enrique Varona Gonzalez	Adelaida	22-10N 78-50W
9. Ignacio Agramote	Agramonte	21-31N 78-14W
10. Orlando Gonzalez	Algodones	21-52N 78-59W
11. Ecuador	Baragua	21-42N 78-39W
12. Carlos Manuel de Cespedes	Cespedes	21-35N 78-17W
13. Colombia	Elia	21-01N 77-25W
14. Republica Dominicana	Estrella	21-30N 78-18W
15. Argentina	Florida	21-33N 78-15W
16. Amancio Rodriguez	Francisco	20-49N 77-35W
17. Uruguay	Jatibonico	21-08N 79-11W

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18. Sierra de Cubitas	Lugareno	21-33N 77-29W
19. Haiti	Macareno	20-43N 77-52W
20. Alfredo Alvarez Mola	Najasa	21-13N 77-33W
21. Patria o Muerte	Patria	22-06N 78-38W
22. Maximo Gomez	Punta Alegre	22-24N 78-46W
23. Candido Gonzalez	Santa Marta	20-48N 78-01W
24. Noel Fernandez	Senado	21-34N 77-37W
25. Siboney	Siboney	21-16N 77-39W
26. Panama	Vertientes	21-19N 78-12W
27. Primero de Enero	Violeta	21-57N 78-27W
28. Salvador Rosales	Algodonal	20-09N 75-44W
29. Loynaz Hechevarria	Alto Cedro	20-34N 75-57W
30. America Libre	America	20-18N 76-14W
31. Lopez Pena	Baguanos	20-45N 76-02W
32. Los Reinaldos	Baltony	20-11N 75-29W
33. Paquito Rosales	Borjita	20-12N 75-47W
34. Nicaragua	Boston	20-54N 75-43W
35. Cristino Narango	Cacocum	20-45N 76-23W

- 3 -

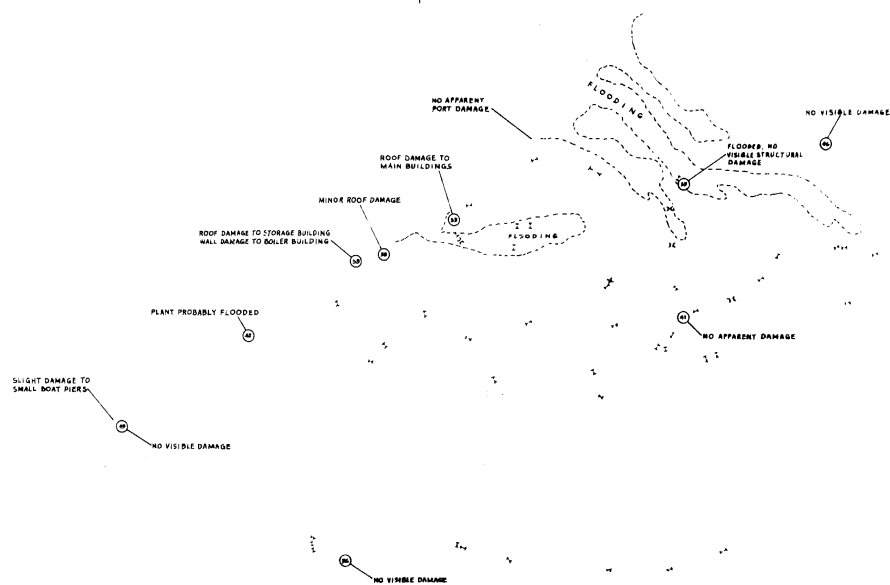
36. Luis E. Carracedo	Cape Cruz	19-54N 77-19W
37. Jesus Menendez	Chaparra	21-09N 76-28W
38. Francisco Castro Ceruto	Dos Amigos	20-14N 77-18W
39. Costa Rica	Ermita	20-11N 75-24W
40. Argeo Martinez	Esperanza	20-12N 75-10W
41. Bartolome Maso	Estrada Palma	20-10N 76-57W
42. Juan Manuel Marquez	Isabel "B"	20-08N 77-27W
43. Honduras	Isabel "G"	20-13N 75-08W
44. Peru	Jobabo	20-54N 77-17W
45. Paraguay	Los Canos	20-03N 75-08W
46. Arquimedes Colina	Mabay	20-21N 76-47W
47. Antonio Maceo	Maceo	20-45N 76-30W
48. Julio A. Mella	Miranda	20-23N 75-55W
49. Roberto Ramirez	Niquero	20-03N 77-35W
50. Dos Rios	Palma	20-14N 76-01W
51. Jose Nemesio Figueredo	Rio Cauto	20-33N 76-55W
52. Hector Infante	Romellie	20-10N 75-05W
53. La Demajagua	Salvador	20-11N 77-14W

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54. Manuel S. Tames	San Antonio	20-09N 75-03W
55. Urbano Noris	San German	20-36N 76-08W
56. Chile	Santa Ana	20-16N 75-53W
57. Rafael Freyre	Santa Lucia	21-03N 76-02W
58. Enidio Diaz Machando	Santa Regina	20-19N 77-19W
59. Ranulfo Leyva	Sofia	20-19N 76-58W
60. El Salvador	Soledad "G"	20-13N 75-13W
61. Fernando de Dios	Tacajo	20-50N 75-56W
62. Frank Pais	Tanamo	20-40N 75-16W
63. Rafael Reyes	Union	20-12N 75-50W



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- 1 - ROAD OR RAILROAD WASHOUT
- 2 - ROAD OR RAILROAD BRIDGE WASHOUT
- 3 - BRIDGE STRUCTURAL DAMAGE
- 4 - INTERMEDIATE WASHOUT

SECRET

PHOTOGRAPHIC REFERENCE

MAP REFERENCE  
SERIES: E 504  
SHEET: NR 50-2  
EDITION: 1-AM-5

SECRET

① NO APPARENT DAMAGE TO  
CENTRAL STADIUM AND  
GALNTHAE.

SEVERE ROOF DAMAGE TO  
CENTRAL

ROAD INUNDATED

② NO APPARENT DAMAGE  
TO CENTRAL

③ SEVERE ROOF DAMAGE  
TO MAIN BUILDINGS  
OF CENTRAL

TOTAL ROOF DESTRUCTION  
OF TWO STORAGE TANKS  
MINOR ROOF DAMAGE TO  
STORAGE WAREHOUSES  
MINOR ROOF DAMAGE TO TWO STORAGE  
BUILDINGS AND TWO SMALLER BUILDINGS  
MODERATE ROOF DAMAGE TO THREE  
STORAGE BUILDINGS  
RAILROAD DAMAGED BY LANDSLIDE (VERY SEVERE)

SECRET

PHOTOGRAPHIC REFERENCE  
MISSION DATE  
MAP REFERENCE  
SERIES E 508



SECRET

NOTE: ALL COASTAL LOWLANDS  
AND INNER VALLEYS HAVE BEEN OR  
WILL BE HEAVILY INUNDATED

—+— ROAD OR RAILROAD WASHOUT  
—X— ROAD OR RAILROAD BRIDGE WASHOUT  
—X— BRIDGE STRUCTURAL DAMAGE  
—+— INTERMITTENT WASHOUT

MINOR ROOF DAMAGE  
AREAS SURROUNDED  
SURROUNDING FIELDS INUNDATED  
SOME LOW AREAS WASHED OUT

SUPERFICIAL ROOF DAMAGE TO WAREHOUSE  
MINOR DAMAGE TO PIER FACILITIES  
TWO MAJOR BRIDGES OUT

MINOR ROOF DAMAGE

SUPERFICIAL ROOF DAMAGE  
TO STORAGE BUILDINGS  
DAMAGE TO ONE (LONG) PIER

NO DAMAGE TO PORT

HEAVY ROOF DAMAGE  
ADJACENT AREA AND  
CAMP FIELDS ARE  
PARTIALLY INUNDATED

NO APPARENT DAMAGE  
TO PORT

PORT IS OPERATIONAL  
SOME ROOF DAMAGE TO SEVERAL  
CENTRAL AND PORT STORAGE  
BUILDINGS

NO APPARENT DAMAGE TO RICE PLANT.  
SOME ROOF DAMAGE TO STORAGE AND  
SUPPORT BUILDINGS. NO APPARENT  
DAMAGE TO PORT

SURROUNDING CROPLELANDS HEAVILY INUNDATED  
WATER NOW PARTIALLY RECEDES  
AREA WAS INUNDATED. WATER NOW RECEDING  
NO DAMAGE TO RAIL OR ROAD IN AREA  
SUPERFICIAL ROOF DAMAGE

EXTENSIVE INUNDATION  
ROADS INUNDATED

5 KM OF ROAD INUNDATED  
MINOR DAMAGE TO ROADBED

MINOR ROOF DAMAGE  
MANY LOW CROPLELANDS INUNDATED  
STEAM WHARVES AND LOW AREAS  
WASHED OUT

NO ROOF DAMAGE

SEVERE ROOF DAMAGE

NO DAMAGE

SUPERFICIAL  
ROOF DAMAGE

TWO BRIDGES  
OUT

TWO BRIDGES  
AND INUNDATED

SUPERFICIAL ROOF  
DAMAGE TO THREE  
BUILDINGS

SECRET

NOT ORIGINALLY REPRODUCED  
DATE 1962  
MAP REFERENCE  
SHEET 1: 5000  
SHEET 2: 5000

SECRET

T

NO APPARENT DAMAGE  
TO PORT FACILITIES

NO APPARENT DAMAGE  
TO PORT FACILITIES

(M)

(N)  
NO APPARENT DAMAGE  
TO CENTRAL

(O)  
NO APPARENT DAMAGE  
TO CENTRAL

(P)  
NO APPARENT DAMAGE  
TO CENTRAL, ROADS  
OR RAILROADS

ROAD UNDATED

(Q)  
NO APPARENT DAMAGE  
TO CENTRAL, ROADS  
OR RAILROADS

SECRET

PHOTOGRAPHIC REFERENCE      MAP REFERENCE  
MISSION      DATE      SERIES      # 302

SECRET

ROAD WASHED OUT 100 FT

② NO APPARENT DAMAGE TO CENTRAL

③ NO APPARENT DAMAGE TO CENTRAL

ROAD WASHED OUT

④ NO APPARENT DAMAGE TO CENTRAL, ROADS AND RAILROADS

⑤ MINOR ROOF DAMAGE TO MAIN BUILDING OF SUGAR CENTRAL - NO APPARENT DAMAGE TO ROADS AND RAILROADS.

⑥ MODERATE ROOF DAMAGE TO CENTRAL TO MAIN AND SUPPORT BUILDINGS

GRADE AND SURFACE SLUMPING DUE TO MOISTURE CONTENT

⑦ ROAD HEAVILY ERODED WITH SEVERE DAMAGE TO BRIDGE AND WEARING SURFACE. CONCRETE DECKED BRIDGES APPEAR TO BE IN GOOD CONDITION. ONE CONCRETE DECK BRIDGE IS HEAVILY DAMAGED.

ROAD INUNDATED

⑧ CONCRETE DECK BRIDGE 1/2 DESTROYED. SOUTH WEST APPROACH GRADE WASHED OUT

⑨ NO APPARENT DAMAGE TO CENTRAL, ROADS, OR RAILROADS

⑩ NO APPARENT DAMAGE TO CENTRAL, ROADS AND RAILROADS

⑪ THREE STORAGE BUILDINGS WITH ROOFS 1/2 DESTROYED. NO APPARENT ROAD OR RAILROAD DAMAGE

\* MINOR WIND DAMAGE TO ONE BUILDING

⑫ NO APPARENT DAMAGE TO CENTRAL

FLOODING  
ROAD INUNDATED

SLIGHT EROSION TO GRADE. GRADE COMPLETELY WASHED THROUGH IN PLACES. NO APPARENT DAMAGE TO TRACKS.

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TELEGRAPHIC DISSEMINATION

MAP REFERENCE  
SHEET E 502  
SHEET NF 17-12  
EDITION 1-A-MS

25X1

SECRET

T

MINOR FLOODING AREA  
FLOODING  
NO APPARENT DAMAGE  
CENTRAL ROAD  
RAILROADS  
FLOODING IN RIVER  
STREAM BASIN

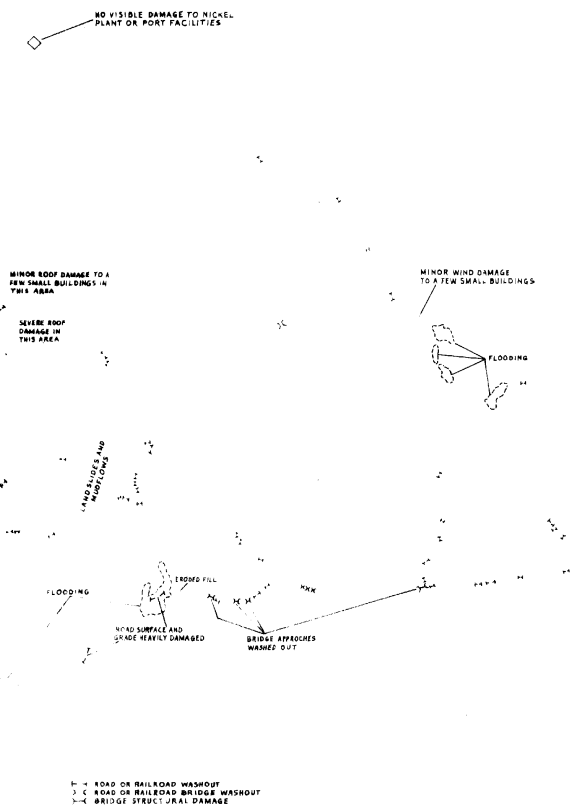
SIX PERS DAMAGED  
FOURTEEN SMALLER  
PIERS DESTROYED  
NO APPARENT DAMAGE  
TO BUILDINGS

SECRET

MAP REFERENCE  
SERIES E 502  
SHEET AP 17-18  
EDITION 1-AM-5  
DATE 1-1-60

25X1

SECRET



SECRET

